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ABSTRACT

Summarized in this report are the activities undertaken in the development of the Classification of Secondary School Courses (CSSC) for the National Center for Education Statistics' use in coding transcripts of high school students. Fifty-two secondary school course catalogs selected from those collected in the High School and Beyond study provided almost 10,000 course titles. These were classified according to instructional program areas as defined in the Classification of Instructional Programs, a postsecondary classification scheme. Each course title is provided a unique six-digit code and linked to keyword descriptors and alternate course titles. This report covers the selection and activities of a review and recommendations panel supporting the CSSC project, the review of related documents, an analysis of the course catalog sample, special considerations in the development of the CSSC, a test of the reliability of the CSSC, and recommendations regarding methods for using the CSSC and for further developing the CSSC or similar classifications. Appendices cover the composition of the review and recommendations panel, the instructional program categories used, the distribution of the course catalog sample by state, and cross-references between related categories in the classification. (Author/PGD)

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A CLASSIFICATION OF SECONDARY SCHOOL COURSES

PROJECT SUMMARY REPORT

Prepared for:

National Center for Education Statistics
Contract Number 300-81-0312

July 23, 1982

EVALUATION TECHNOLOGIES INCORPORATED

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ANNOUNCEMENT

The National Center for Education Statistics (NCES) announces publication of:

A CLASSIFICATION OF SECONDARY SCHOOL COURSES: PROJECT SUMMARY REPORT

This report was prepared by Evaluation Technologies Incorporated (ETI) of Arlington, Virginia under contract with NCES. The report describes the activities undertaken by ETI in developing a (separately published) "Classification of Secondary School Courses" for use by NCES in a projected study of offerings and enrollments in American High Schools.

This report describes: (a) the development of the Classification, (b) its review by a panel of subject matter experts, (c) an empirical assessment of intercoder reliability, and (d) recommendations concerning the use of the Classification.

This report is available only through the ERIC system. (DSS will supply details). Additional information about this report can be obtained from George H. Brown, Longitudinal Studies Branch, National Center for Education Statistics (Presidential Building), Room 408, 400 Maryland Avenue, S.W., Washington, D.C. 20202, telephone (301) 436-6688.

Information about the Center's statistical program and a catalog of NCES publications may be obtained from the Statistical Information Office, National Center for Education Statistics, (Presidential Building), 400 Maryland Avenue, SW., Washington, D.C. 20202, telephone (301) 436-7900.

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I. INTRODUCTION

This final report summarizes the activities undertaken in the development of a Classification of Secondary School Courses (CSSC). The Classification was produced by Evaluation Technologies Incorporated (ETI) for the National Center for Education Statistics (NCES) under contract number 300-81-0312. The Classification was developed for use by NCES in coding transcripts of high school students. These transcripts were collected by NCES from schools participating in the High School and Beyond longitudinal study.

The CSSC is an inventory of secondary school courses taught nationwide. The course titles in the Classification were taken from a pool of nearly 10,000 course titles in a scientifically selected sample of secondary school course catalogs. The secondary school courses are arranged in the Classification according to instructional program areas as defined by the Classification of Instructional Programs (CIP), a postsecondary classification developed by NCES. Each course title is further distinguished by a unique six-digit code, keyword descriptors, and alternate course titles.

The activities central to the development of the CSSC are described in the following sections of this report:

- Development of the Classification
- Review of the Classification by a panel of subject-matter specialists
- Test of inter-coder reliability using the completed Classification
- Recommendations from the ETI project team to NCES on the use of the Classification.

Further documentation is provided in several appendices:

- Composition of the Review and Recommendations Panel
- List of Instructional Program Categories from the CIP
- Distribution of sample of local school catalogs by state
- List of Cross References between categories within the Secondary School Classification

II. DEVELOPMENT OF THE CLASSIFICATION OF SECONDARY SCHOOL COURSES

A. SELECTION OF A REVIEW AND RECOMMENDATIONS PANEL

Before the development process began, a panel of twenty-four secondary school curriculum specialists was selected. Through nominations by peers, professional associations, and program specialists at the U.S. Department of Education, a pool of candidates was identified who met such criteria as:

- Knowledge of the discipline as evidenced by an advanced degree or teaching experience
- Knowledge of secondary school curriculum through experience as a secondary school teacher or administrator
- Awareness of the state of the discipline in terms of current and out-of-date course titles and content.

The panelists were chosen to support the project team in the analysis of a sample of course catalogs and to review the draft Classification. A list of panelists and their areas of expertise is found in Appendix A. A summary of their contributions to the Classification is provided in Paragraph E below.

B. REVIEW OF RELATED DOCUMENTS

The CSSC represents titles of courses offered in grades 7 through 12 in the nation's secondary schools. Vocational, academic, and general courses offered for credit are included. These titles were selected through a carefully designed process combining a review of existing classifications of such courses and an analysis of a sample of local course catalogs. The expertise of the panelists was applied in the choice of titles and keywords, and in the placement of course titles within program areas.

The documents reviewed and their application to the CSSC are described briefly below.

1. The Classification of Instructional Programs (CIP)[1]

A postsecondary classification of instructional program areas, not individual courses, the CIP areas and the first four digits of its six-digit numeric code are the basis of the CSSC. Several CIP program areas were determined to pertain only to the postsecondary level. Therefore, with the concurrence of panel experts, no secondary courses were assigned to these program areas: Education (13), Engineering (14), Health Sciences (18), Home Economics (19), Military Technologies (29), and Science Technologies (41). The CIP aggregates many related program areas at the four-digit level. Since the unit of analysis of the CSSC is the individual course title, the CSSC has more volume. For example, the CIP has one four-digit program area called "History." The CSSC contains 69 individual history courses. A complete list of CIP program categories is provided in Appendix B.

2. Other References

The project team reviewed three other sources for course titles and their program area affiliation during the development process:

- Standard Terminology for Curriculum and Instruction in Local and State School Systems, Handbook VI. This division of twenty subject-matter areas and topics of instruction proved to be a good reference for keyword descriptors.

- Appendix B of the 1972-73 Offerings and Enrollments Survey. An aggregated list of courses and program titles offered in various schools, this document alerted the ETI project team to the variety of secondary school courses.

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[1]Malitz, Gerald S. A Classification of Instructional Programs. U.S. Department of Education, Office of Education Research and Improvement, National Center for Education Statistics, NCES 81-323, Washington, D.C.: U.S. Government Printing Office, 1981.

- State Taxonomies. The lists of courses from the states of California, Washington, and Illinois were used to augment the course titles selected from the sample of local school catalogs.

C. ANALYSIS OF SAMPLE OF LOCAL SCHOOL COURSE CATALOGS

A sample of 52 secondary school course catalogs, dated 1979 through 1981, was chosen by NCES from those collected in the High School and Beyond Study. Private independent, private religiously-affiliated, and public schools were included in the sample. The distribution of catalogs by state is presented in Appendix C.

Each course offered for credit was analyzed for inclusion in the Classification. The goal of the analysis was to identify unique course titles, match them with CIP two- and four-digit areas, select keyword descriptors to discriminate course content, and assign each unique title an equally unique six-digit code.

The first project product, a course descriptive card file, was automated and then printed as a catalog. This catalog contained 1513 course titles, and accompanying keywords, alternate titles, and six-digit codes arranged according to CIP program areas. It also contained a complete course title index. This product was intended for use by the review panelists and was distributed to them before a two-day working meeting in April, 1982.

The final CSSC contains all the recommendations of the panelists as to additional course titles, corrected course titles, and keywords. In addition, at the two- and four-digit levels, the CSSC text contains descriptive paragraphs for the instructional programs as they are presented in the CIP. At the six-digit level, individual courses are presented as in the sample below.

a b

07.0631 Secretarial Administration

c { Secretarial Practice; Secretarial Procedures; Secretarial Office Practice; Secretarial Typewriting, Integrated; Secretarial Skills, Integrated

d { Secretarial occupations; records management; human relations; general office workflow; advanced typewriting; etiquette; information processing; text editing

The parts of a course entry are indicated by the letters a, b, c, and d. They are:

a. Six-Digit Code. Each entry representing a unique secondary course is assigned a six-digit code. The first four digits reading from left to right are taken from the CIP in all cases. Here the 07.06 represents the CIP area "Secretarial and Related Programs." The fifth and sixth digit provide a unique numeric code for the specific course.

b. Main Course Title. A significant problem in gathering course offerings data is that a variety of possible titles can be used to identify a single course. The title occurring most frequently in connection with a specific course was established as the main course title.

c. Alternate Course Titles. These titles are variations on the main title used to describe a course with the same content. All alternate titles have the same six-digit code as the main title under which they are listed. In this way, the CSSC aggregates the diverse course titles used in local schools to describe the same course.

d. Keyword Descriptors. These phrases are intended to provide a description of the content of the associated course. The phrases are adapted from the course descriptions in local catalogs, enriched with panelists' recommendations.

During the analysis of catalogs and other references and from the review of program areas by panelists, areas of overlap in instructional programs were identified. Therefore, the final CSSC contains a table of cross references for closely related programs. This table is presented in Appendix D.

D. SPECIAL CONSIDERATIONS IN THE DEVELOPMENT OF THE CSSC

1. Coding Methods

There were two methods used to assign numeric codes to course titles, at the fifth- and sixth-digit levels. When less than nine courses were found for any one four-digit program area, the fifth digit was used as a course designator and the sixth digit as a course level indicator. When more than nine courses were found for any one four-digit program area, courses are numbered sequentially starting with "0" at the fifth-digit level and "1" at the sixth-digit level.

2. The "Other" Category

Within each four-digit instructional program area one six-digit code was established to accommodate courses not specifically identified in the CSSC. The code consists of the four digits plus zeros in the fifth and sixth positions. The main titles used in the CSSC for these codes are the four-digit level program titles followed by "other;" e.g., "Agriculture Services and Supplies, Other" (code: 01.0500).

3. Bilingual, Gifted, and Special Education

No special coding for courses designed for academically talented or special needs students is supplied in the CSSC, nor is special coding available for courses taught in a language other than English.

4. Vocational Student Organization

While it is recognized that participation in vocational student organizations is an essential part of many instructional programs at the secondary level, the CSSC does not include keyword descriptors to indicate such participation.

E. ACTIVITIES OF THE REVIEW AND RECOMMENDATIONS PANEL

The objective of the Review and Recommendations Panel meeting was to receive feedback from secondary education subject matter experts on the comprehensiveness and representativeness of the CSSC. The following paragraphs summarize the meeting format and purpose and the major issues and recommendations of the panelists.

1. Meeting Format and Purpose

The panel meeting was held at the Capitol Park International Hotel in Washington, D.C. on April 27 and 28, 1982. The majority of the two days' meeting time was devoted to formal panelist presentations. Each of the twenty-four panelists spoke for approximately fifteen minutes addressing his/her overall recommendations for revisions to the Draft Interim Course Catalog. Questions and reactions from other panelists and the observers from NCES and other Department of Education offices followed each presentation.

2. Major Issues of Panelist Presentations

The twenty-four panelists prepared written recommendations for specific changes to the Draft Catalog. These changes were included in summary form as part of their oral presentations during the panel meeting. A synopsis of the issues and recommendations is presented below.

- The panelists did not view the course arrangement as a taxonomy, therefore, they recommended the document be reentitled "Classification of Secondary School Courses."

- Concerned that the CSSC might be misused by extending it to applications beyond those for which it was designed, the panelists recommended that a note of caution on its use be placed in the final document.

- Since secondary schools assign similar courses to different departments, the panelists recommended that a cross reference guide at the four-digit level be developed to assist coders and other users of the CSSC.

- Concerned that consistent information about different student populations enrolled in courses was not available, the panelists recommended excluding any identification of courses by type of student enrolled; e.g., special education, bilingual and/or gifted.

- For many course titles, available keywords lacked specificity. Panelists corrected, added, and rewrote keyword descriptors based on their knowledge of course content.

- The panelists noted that shifts in secondary school curricula continually occur. They recommended a periodic updating of the CSSC to maintain its utility as a data gathering tool.

The report on the panel meeting submitted by ETI included a chart of over 200 revisions by type recommended by the panelists, and summaries of panelist contributions for each subject-matter area.

III. RELIABILITY TEST OF THE CSSC

In order to examine the reliability of the Classification of Secondary School Courses, ETI designed and conducted a test of inter-coder reliability. The following is a summary of the training program, the reliability test plan, and the analysis plan and results.

A. CODER SELECTION AND TRAINING

Four coders meeting the two criteria of having an American high school diploma and a minimum of two full years of college education were selected and trained for participation in the reliability test of the Classification of Secondary School Courses. In an eight-hour training session, the coders were instructed on how to assign six-digit codes to secondary course titles using the CSSC. The materials required for the session included the training outline, the completed CSSC, training protocols containing sample course titles for practice coding, a reminder list of special instructions, and a diagram on "Making a Coding Decision."

The training session began with a 30-minute introduction to the training session, the test and the intended use of the CSSC in the NCES High School and Beyond longitudinal study. The next 30 minutes continued with a page-by-page review of the CSSC, highlighting each section as to information included; such as the alphabetical index, the Table of Cross References, and the main body of six-digit coded courses.

After a 15-minute break, the coders were introduced to the protocol to be used during the test, the 50 high school catalogs to be used as the source of the courses, and the coding procedure. The coding procedure consisted of the coder entering his/her name, start time, six-digit code chosen from the CSSC, noting any reference to high school catalogs, and recording time of completion. The coders were briefed on certain rules; such as, following the prescribed order of the protocols, refraining from discussing coding decisions among themselves, and completing the protocol on which

they were working before taking a break or leaving for the day. Coders were given guidelines for coding tracked and leveled courses. After the lunch break, the coders spent the remaining four hours on three increasingly difficult practice trials and reviewed their coding decisions and problems with the trainers.

B. RELIABILITY TEST

The four coders then spent the remaining eight days making 1,000 coding decisions on 50 protocols. The course titles on the protocols were randomly selected from a subsample of 50 local catalogs obtained from NCES. If in doubt about a course title listed on a protocol, the coder was permitted to refer to the school catalog from which the course was selected and was instructed to note this reference with a check on the protocol sheet. Coding for one protocol of 20 courses averaged 33 minutes.

After the two-week testing period, an analysis of the results was completed. The goals of the analysis were to obtain measures of the accuracy and inter-coder reliability of the coding, to assess the training effectiveness, and to summarize the coders' reactions to the CSSC and to the coding task. The sources for data included: (1) completed protocols on which coders entered their classifications of the 1,000 course titles, (2) responses to a coder feedback questionnaire, and (3) the test monitor's observations and records of interactions with the coders. In addition, fifty titles were selected for an accuracy check whereby the CSSC experts' coding decisions were compared to those of the novices.

The data were reported in several ways. First, inter-coder reliability was measured by computing the percentage of agreement on code selection at the two-, four-, and six-digit levels. Next, the number of classifications on which 3, 2 and no raters agreed was computed with a difficulty index for each two-digit program area. The number of catalog references by two-digit area was also reported. Finally, the responses of the coders to a questionnaire on the training session were analyzed and summarized.

Coder accuracy was determined by comparing each coder's responses on a sample of course titles to the correct classification of those titles by two CSSC experts. The average percent of agreement for the three coders at the two-digit level was 83 percent; at the four-digit level 71 percent; and at the six-digit level 43 percent.

Inter-coder reliability was found to improve between the beginning of the study (the first ten protocols) and the end of the study (the remaining protocols). Pair-wise averages computed showed a higher overall percentage of agreement among the pairs of coders than between each individual coder and the experts. In fact, if decisions of two out of three coders are accepted as a satisfactory measure of reliability, the results of the test demonstrate agreement on a unique code can be expected approximately 90 percent of the time at the six-digit level, 98 percent of the time at the four-digit level, and 99 percent of the time at the two-digit level.

The analysis of coder responses to the Feedback Questionnaire indicated that the training provided all the information needed to use the CSSC in a coding task. The coders recommended more comparative work be included in the training sessions, as well as practice in using a cross-referencing tool. The similarity of courses and vagueness of some of the descriptors were problems encountered by the coders. The tedious nature of the task was noted and suggestions made for individual pacing and frequent breaks.

IV. RECOMMENDATIONS

Throughout the development process, problems surfaced and were discussed among the project team members with technical staff at NCES, and with the subject-matter specialists on the review panel. These problems led to considerations of the methodology applied to the CSSC development, to the content of the CSSC, and to the future uses of the CSSC.

A. METHODOLOGICAL CONSIDERATIONS

A chief concern of the project team in building the Classification was the representativeness of the pool of course titles from which we were selecting both titles and keywords. All types of public and private schools were represented in the sample chosen by NCES. However, the number of private schools was small. The project team would recommend that a larger, possibly stratified, sample of such catalogs be used in any further efforts in building a new classification or updating the CSSC.

Once the main and alternate course titles were selected, the process of selecting keyword descriptors from the course catalogs raised issues about the adequacy of the descriptions provided in the catalogs. In many course catalogs, the description of course content was so general that literally no specific descriptors could be chosen for use by the project team. For many other courses similar descriptors were provided by the school, making it difficult to discriminate between titles by content.

Subject-matter specialists were consulted for assistance in choosing descriptors. The specialists were particularly helpful when they reviewed the draft Course Catalog of the CSSC. Many panelists rewrote keyword descriptors based on their experiences teaching similar courses. Others analyzed written curriculum materials, including textbooks, to select appropriate descriptors for courses taught with these materials. Because of the difficulties encountered in drawing keywords exclusively from the ocal catalogs, the panelists and the project team felt a wider distribution of the titles and keywords among specialists yielding a broader peer

evaluation of the descriptors would be recommended in either adding to the CSSC or developing any similar classifications.

B. CONTENT CONSIDERATIONS

The review process also identified possible content additions to the CSSC. A chief addition recommended by panelists was the length of time for which each course was offered. Panelists maintained that the nature and content of courses may differ with the length of course. The CSSC descriptors do not distinguish between quarter or full semester courses. Therefore, there is no way to assess differences between courses based on length of time taken.

The panelists were also concerned about distinguishing secondary school program areas from program areas in postsecondary curriculum. They recommended the elimination of those CIP program areas which would not represent secondary school curriculum. Other program areas at the four-digit level were identified by panelists as closely related and even overlapping. The interdisciplinary nature of many courses and the variety of departmental placement possibilities displayed in school catalogs were cited as evidence that cross referencing, rather than arbitrary placement, was realistic. This recommendation was adopted and a cross reference table for closely related programs at the four-digit level was developed and added to the introductory material in the final CSSC.

Finally, the project team was told by panelists and other specialists in secondary school curriculum that the is constantly shifting, expanding in some disciplines, and consolidating in others. Therefore it was recommended that every few years a number of sample catalogs be chosen for an updating activity. The panelists maintained that even though the original purpose of the CSSC will be satisfied in the coding of student transcripts, it will be important to update the list of courses contained in the CSSC. Since the CSSC is the most current classification of secondary school curriculum, it may be worthwhile to maintain it to meet the data collection needs of researchers, curriculum specialists, and school administrators.

C. USES OF THE CSSC

A number of recommendations for the use of the CSSC were identified in the review panel meeting. These are presented below together with lessons learned during the test of inter-coder reliability.

1. Coding Student Transcript Data

The primary purpose of the CSSC is its application in the coding of student transcript data for the High School and Beyond study. The project team conducted a test of intercoder reliability to identify the weak and strong areas of the Classification as a coding tool. In the process of training the coders and in conducting the analysis of test results a number of issues concerning coding behavior were noted.

a. Confusion over Level Assignment. Frequently coders agreed at the four-digit level, but they varied in interpretation of the course level indicated by the fifth and sixth digits. One example of this confusion concerned Protocol 2, line 17, course title Economics. The codes assigned were 45.0602 Economics and Economic Problems; 45.0601 Economic Theory, Basic; 45.0611 Economics, College. A similar situation occurred in Protocol 3, line 12 Environmental Biology and Protocol 4, Line 10 Practical Math.

Recommendation: A guideline sheet was developed and used during the training session to help the coders distinguish among levels. In future training, increased emphasis should be placed on reviewing the differences among levels.

b. Classification of Vague Course Titles. Some courses had vague titles; for example, "Literary Highlights." The course description indicated both British and American literature were covered. Since no code for such an all-inclusive course was provided in the CSSC, coders agreed at the two-digit "Letters" level, but varied at the four- and six-digit levels.

Recommendation: Invariably such courses will be discovered in student data. The coders can only be alerted to the possibility and then asked to place courses using the keywords, course catalog descriptions and their best judgement.

c. Classification of Generic Titles. In some instances, the CSSC uses the generic title, i.e., "Aquatics" instead of a specific form of aquatics such as Skin Diving. The Protocol 38, line 16 listed the course title "Skin Diving." Coders placed it under 34.0161 Physical Education Leadership Training, 36.0161 Aquatics and 31.0200 Outdoor Recreation, Other.

Recommendation: Coders should be trained to search for generic titles when the specific course title is not listed. A cross reference for generic titles could be added to the general list of cross references.

d. Classification of Courses with Combined Concepts. Several courses combine concepts from two different program areas making it difficult to know whether to place the course in the main or related program area; for example, history, area studies, or multi/interdisciplinary studies. This conflict is reflected in Protocol 13, line 13 History and Philosophy of Sciences which was variously placed in 30.0411 Humanities, 45.0311 Archaeology, 40.0100 Physical Sciences, Other. Similarly, Protocol 6, line 14 General Science was placed in 26.0611 Ecology, 30.0111 Science, Unified, and 26.0151 Field Biology. In the same manner Protocol 10, line 1 American History, Basic, 05.0103 American Studies, General, and 45.0822 American Inquiries. Finally in Protocol 10, line 4 Technology and Environment was placed in 30.0621 Environmental Science, 03.0211 Conservation and Regulation, and 45.1131 Sociology, Issues.

Recommendation: Examples of combined concept courses could be included in the list of cross references.

e. Discrimination Between Programs at the Two-Digit Level. In some cases, courses were placed according to a course title that was listed, but in a program that was not as appropriate. For example Protocol 3, line 15 Cooperative Office Management was placed in 07.0742 Office Education 2, Cooperative; 07.0741 Office Education 1, Cooperative; 32.0107 Cooperative Education 2. The 07 is the Business Program Category and the 32 is Basic Skills under "Personal and Social Development" Program Category. In a similar way, Protocol 5, line 5 World Civilization is listed both under 45.08 History and 30.04 Humanities and Social Sciences by different coders.

Recommendation: The definition of some program areas needs to be reemphasized for the coders. The areas of difficulty highlighted by the difficulty index should be emphasized during the training sessions.

f. Confusion over Course Objectives. Many secondary school catalogs do not clearly state the objectives of each course in the course description. For example, a course listed as "Drama" without accompanying objectives does not indicate whether the course is in the reading of the drama, the writing of plays, or the acting of dramatic literature. The coders specifically had difficulty with Protocol 6, line 8, Beginning Drama. This course was coded both as 23.01, reading of drama and 50.05, acting of drama.

Recommendation: A tighter definition of four-digit program areas is probably necessary. However, this is beyond the scope of the CSSC. The problems of definition within disciplines are most likely being reflected in a lack of precision of course objectives and program areas within departments in secondary schools.

g. Placement of Low Frequency Course Titles. Unusual titles are likely to provide difficulties for coders. For example, the course Peer Counseling, Protocol 6, line 17 was placed by coders

In both 42.06 Counseling Psychology and 33.01 Citizenship/Civic Activities. Both program areas may be appropriate for a course in which students learn the principles of counseling their peers and then intern in a community-based peer counseling program. The unfamiliarity of such titles will make it difficult to locate them, especially if they have not been claimed by the particular discipline.

Recommendation: These unusual courses will invariably be found in some student data. In the training session, coders should be alerted to such titles and be told to use their best judgement in their classification efforts.

2. Providing a Model for Other Classifications

Until its development, the CSSC had no recent predecessor as a classification of public and private secondary school courses. During the development process the project team was advised that similar efforts would be useful for the elementary level curriculum and for a comparison of curricula across nations. The documentation provided at each stage of development of the CSSC by the project team makes possible the development of other classifications.

3. Clarification of Course Location within Program Areas

Provided that the program areas used in the CSSC are meaningful to secondary school educators, the CSSC may be used to clarify the location of courses within departments or divisions. The CIP has been used in this way by postsecondary educators planning additional curriculum and clarifying degree programs for their students. The CSSC could be used as a similar reference.

4. Data Collection at the Aggregate or Disaggregate Level

Researchers and school administrators frequently need information about the number of courses offered across school districts as well as the number and

kinds of courses offered within departments at the school level. The CSSC provides enough detail -- to the six-digit level -- and basic cross references to permit data collection at the two- four- and six-digit levels. The information about breadth and depth of course offerings may be useful in planning for cutbacks or expansions within departments at the school level and across school districts.

5. Trend Analysis

If the CSSC is updated at periodic intervals, it may be useful for those analyzing the trends in course consolidation or expansion within program areas over time. Further information provided in this type of analysis could be change in course content, as evidenced by change in keyword descriptors, in course placement, and in new concerns within disciplines.

6. Articulation Planning

For those curriculum specialists or administrators concerned with the relationship between either junior high school courses or postsecondary courses with secondary school courses, the CSSC could be useful. An examination of the types and levels of courses offered in various program areas could indicate the variety of preparation of students going from one level to another.

APPENDIX A: REVIEW AND RECOMMENDATIONS PANEL

APPENDIX A: REVIEW AND RECOMMENDATIONS PANEL

NAME	AFFILIATION	POSITION	DISCIPLINE
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REVIEW AND RECOMMENDATIONS PANEL (Cont'd)

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REVIEW AND RECOMMENDATIONS PANEL (Cont'd)

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REVIEW AND RECOMMENDATIONS PANEL (Cont'd)

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Sally Pancrazio, Ph.D.	Illinois Office of Education	Manager, Research and Statistics	CEIS, Committee on Evaluation and Information Systems
Robert Smith	Washington, D.C.	Executive Director Council for American Private Education	Council for American Private Education
Lou Zuccarelli	Northern Virginia Community College	Associate Professor: Program Head Fire Protection Technology Program	Protective Services

APPENDIX B: LIST OF CIP INSTRUCTIONAL PROGRAM AREAS

LIST OF INSTRUCTIONAL PROGRAM CATEGORIES

Agriculture

01. Agribusiness and Agricultural Production
02. Agricultural Sciences
03. Renewable Natural Resources

Architecture and Environmental Design

04. Architecture and Environmental Design

Area and Ethnic Studies

05. Area and Ethnic Studies

Business

06. Business and Management
07. Business and Office
08. Marketing and Distribution

Communications

09. Communications
10. Communication Technologies

Computer and Information Sciences

11. Computer and Information Sciences

Consumer, Personal, and Miscellaneous Services

12. Consumer, Personal, and Miscellaneous Services

Education

13. Education

Engineering

14. Engineering
15. Engineering and Engineering-Related Technologies

Foreign Languages

16. Foreign Languages

Health

17. Allied Health
18. Health Sciences

Home Economics

19. Home Economics
20 Vocational Home Economics

Industrial Arts

21. Industrial Arts

Law

22. Law

Letters

23. Letters

Liberal/General Studies

24. Liberal/General Studies

Library and Archival Sciences

25. Library and Archival Sciences

Life Sciences

26. Life Sciences

Mathematics

27. Mathematics

Military Sciences

28. Military Sciences
29. Military Technologies

Multi/Interdisciplinary Studies

30. Multi/Interdisciplinary Studies

Parks and Recreation

31. Parks and Recreation

Personal and Social Development

32. Basic Skills
33. Citizenship/Civic Activities
34. Health-Related Activities
35. Interpersonal Skills
36. Leisure and Recreational Activities
37. Personal Awareness

Philosophy, Religion, and Theology

38. Philosophy and Religion
39. Theology

Physical Sciences

40. Physical Sciences
41. Sciences Technology

Psychology

42. Psychology

Public Affairs and Protective Services

43. Protective Services
44. Public Affairs

Social Sciences

45. Social Sciences

Trade and Industrial

46. Construction Trades
47. Mechanics and Repairers
48. Precision Production
49. Transportation and Material Moving

Visual and Performing Arts

50. Visual and Performing Arts

APPENDIX C: GEOGRAPHICAL DISTRIBUTION OF SUBSAMPLE
OF LOCAL COURSE CATALOGS (1979-1981)

APPENDIX C: GEOGRAPHICAL DISTRIBUTION OF SUBSAMPLE OF LOCAL COURSE CATALOGS (1979-1981)

State	Number of Catalogs Analyzed
California	8
Illinois	7
Ohio	5
Michigan	3
New York	3
New Jersey	3
Iowa	2
Maryland	2
Pennsylvania	2
Connecticut	2
Kentucky	2
Virginia	1
Florida	1
North Carolina	1
Oregon	1
Arizona	1
Missouri	1
Alaska	1
Hawaii	1
District of Columbia	1
Nevada	1
Utah	1
Nebraska	1
Georgia	1
Total:	52

APPENDIX D: TABLE OF CROSS REFERENCES

CROSS REFERENCES FOR CLOSELY RELATED PROGRAMS IN SECONDARY SCHOOL CURRICULA

This table is designed to enable users to locate courses in the CSSC that may be taught within several different disciplines or program areas in secondary curricula. The interdisciplinary content of many courses and the variance in school districts' placement of courses within their curricula make assignment of single classification codes to course titles difficult.

The placement of a course within a particular four-digit program area in the CSSC does not eliminate the possibility of the same course being offered within a number of other four-digit areas as well. The cross references appearing below were identified by the Review Panelists as being areas of substantial overlap of program content in secondary education.

For Related Courses In:		See Also:	
08.02	Business and Personal Services Marketing	09.02	Advertising
09.01	Communications, General	10.01	Communications Technologies
		15.03	Electrical and Electronic Technologies
		23.05	Creative Writing
		50.05	Dramatic Arts
10.01	Communication Technologies	50.06	Film Arts
11.02	Computer Programming	07.03	Business Data Processing
11.03	Data Processing		
16.01	through 16.11 Foreign Languages	15.01	Area Studies
		15.02	Ethnic Studies
22.01	Law	43.01	Criminal Justice

23.01	English, General	30.04	Humanities
		50.05	Dramatic Arts
27.03	Applied Mathematics	07.01	Accounting, Bookkeeping and Related Programs
		11.01	Computer and Information Sciences, General
		27.01	Mathematics, General
34.01	Health Related Activities	17.01	through 17.08 Allied Health
		26.01	through 26.07 Life Sciences
		30.01	Biological and Physical Sciences
42.01	Psychology, General	35.01	Interpersonal Skills
		37.01	Personal Awareness
45.01	Social Sciences, General	30.04	Humanities and Social Sciences
		42.01	Psychology, General
45.07	Geography	05.01	Area Studies
45.08	History		
45.10	Political Science and Government	22.01	Law
		33.01	Citizenship
45.11	Sociology	30.07	Women's Studies
50.07	Fine Arts	04.02	Architecture
50.08	Graphic Arts Technology	09.04	Journalism
		48.02	Graphic and Printing Communication